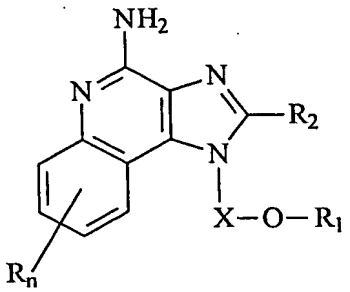
WHAT IS CLAIMED IS:

1. A compound of the formula (I):



(I)

wherein: **X** is $-CHR_5-$, $-CHR_5$-alkyl-, or $-CHR_5$-alkenyl-;

$\mathbf{R_1}$ is selected from the group consisting of:

$-R_4-CR_3-Z-R_6-$alkyl;

$-R_4-CR_3-Z-R_6-$alkenyl;

$-R_4-CR_3-Z-R_6-$aryl;

$-R_4-CR_3-Z-R_6-$heteroaryl;

$-R_4-CR_3-Z-R_6-$heterocyclyl;

$-R_4-CR_3-Z-H$;

$-R_4-NR_7-CR_3-R_6-$alkyl;

$-R_4-NR_7-CR_3-R_6-$alkenyl;

$-R_4-NR_7-CR_3-R_6-$aryl;

$-R_4-NR_7-CR_3-R_6-$heteroaryl;

$-R_4-NR_7-CR_3-R_6-$heterocyclyl; and

$-R_4-NR_7-CR_3-R_8$;

each **Z** is independently $-NR_5-$, $-O-$, or $-S-$;

$\mathbf{R_2}$ is selected from the group consisting of:

-hydrogen;

-alkyl;

-alkenyl;

-aryl;

-heteroaryl;

-heterocyclyl;

-alkyl-Y-alkyl;

-alkyl-Y- alkenyl;

-alkyl-Y-aryl; and

- alkyl or alkenyl substituted by one or more substituents selected from the group consisting of:

-OH;

-halogen;

-$N(R_5)_2$;

-CO-$N(R_5)_2$;

-CO-C_{1-10} alkyl;

-CO-O-C_{1-10} alkyl;

-N_3;

-aryl;

-heteroaryl;

-heterocyclyl;

-CO-aryl; and

-CO-heteroaryl;

each $\mathbf{R_3}$ is =O or =S;

each $\mathbf{R_4}$ is independently alkyl or alkenyl, which may be interrupted by one or more –O– groups;

each $\mathbf{R_5}$ is independently H or C_{1-10} alkyl;

$\mathbf{R_6}$ is a bond, alkyl, or alkenyl, which may be interrupted by one or more –O– groups;

$\mathbf{R_7}$ is H, C_{1-10} alkyl, or arylalkyl; or R_4 and R_7 can join together to form a ring;

$\mathbf{R_8}$ is H or C_{1-10} alkyl; or R_7 and R_8 can join together to form a ring;

each **Y** is independently –O– or $-S(O)_{0-2}-$;

n is 0 to 4; and

each **R** present is independently selected from the group consisting of C_{1-10} alkyl, C_{1-10} alkoxy, hydroxy, halogen and trifluoromethyl;
or a pharmaceutically acceptable salt thereof.

2. A compound or salt of claim 1 wherein the heteroaryl is selected from the group consisting of 2-pyridyl, 3-pyridyl, 4-pyridyl, 2-thiazolyl, and 4-pyrazolyl.

3. A compound or salt of claim 1 wherein X is –CH(alkyl)(alkyl)– wherein the alkyl groups can be the same or different.

4. A compound or salt of claim 1 wherein X is $–CH_2–CH_2–$.

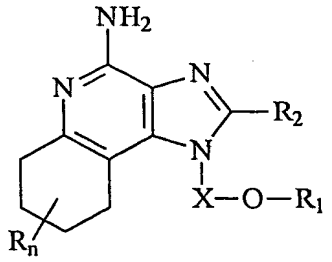
5. A compound or salt of claim 1 wherein X is $–CH(C_2H_5)(CH_2)–$.

6. A compound or salt of claim 1 wherein R_2 is H.

7. A compound or salt of claim 1 wherein R_2 is alkyl.

8. A compound or salt of claim 1 wherein R_2 is –alkyl–O–alkyl.

9. A compound of the formula (II)



(II)

wherein: **X** is $–CHR_5–$, $-CHR_5$-alkyl-, or $–CHR_5$-alkenyl-;
$\mathbf{R_1}$ is selected from the group consisting of:
$-R_4–CR_3–Z–R_6—$alkyl;

-R_4–CR_3–Z–R_6—alkenyl;

-R_4–CR_3–Z–R_6—aryl;

-R_4–CR_3–Z–R_6—heteroaryl;

-R_4–CR_3–Z–R_6—heterocyclyl;

-R_4–CR_3–Z–H;

-R_4–NR_7 –CR_3–R_6—alkyl;

-R_4–NR_7 –CR_3–R_6—alkenyl;

-R_4–NR_7–CR_3–R_6–aryl;

-R_4–NR_7–CR_3–R_6–heteroaryl;

-R_4–NR_7–CR_3–R_6–heterocyclyl; and

-R_4–NR_7 –CR_3–R_8;

each **Z** is independently –NR_5–, –O–, or –S–;

$\mathbf{R_2}$ is selected from the group consisting of:

-hydrogen;

-alkyl;

-alkenyl;

-aryl;

-heteroaryl;

-heterocyclyl;

-alkyl-Y-alkyl;

-alkyl-Y- alkenyl;

-alkyl-Y-aryl; and

- alkyl or alkenyl substituted by one or more substituents selected from the group consisting of:

-OH;

-halogen;

-$N(R_5)_2$;

-CO-$N(R_5)_2$;

-CO-$C_{1\text{-}10}$ alkyl;

-CO-O-$C_{1\text{-}10}$ alkyl;

-N_3;

-aryl;

-heteroaryl;

-heterocyclyl;

-CO-aryl; and

-CO-heteroaryl;

each $\mathbf{R_3}$ is =O or =S;

each $\mathbf{R_4}$ is independently alkyl or alkenyl, which may be interrupted by one or more –O– groups;

each $\mathbf{R_5}$ is independently H or $C_{1\text{-}10}$ alkyl;

$\mathbf{R_6}$ is a bond, alkyl, or alkenyl, which may be interrupted by one or more –O– groups;

$\mathbf{R_7}$ is H, $C_{1\text{-}10}$ alkyl, arylalkyl; or R_4 and R_7 can join together to form a ring;

$\mathbf{R_8}$ is H or $C_{1\text{-}10}$ alkyl; or R_7 and R_8 can join together to form a ring;

each **Y** is independently –O– or $-S(O)_{0\text{-}2}$-;

n is 0 to 4; and

each **R** present is independently selected from the group consisting of $C_{1\text{-}10}$ alkyl, $C_{1\text{-}10}$ alkoxy, hydroxy, halogen, and trifluoromethyl;

or a pharmaceutically acceptable salt thereof.

10. A compound or salt of claim 9 wherein R_2 is H or alkyl.

11. A compound or salt of claim 9 wherein R_2 is –alkyl–O–alkyl.

12. A pharmaceutical composition comprising a therapeutically effective amount of a compound or salt of claim 1 and a pharmaceutically acceptable carrier.

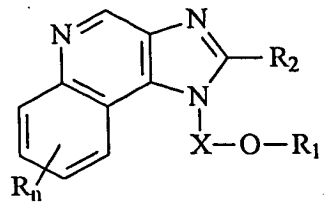
13. A method of inducing cytokine biosynthesis in an animal comprising administering a therapeutically effective amount of a compound or salt of claim 1 to the animal.

14. The method of claim 13 wherein the cytokine is IFN-α.

15. A method of treating a viral disease in an animal comprising administering a therapeutically effective amount of a compound or salt of claim 1 to the animal.

16. A method of treating a neoplastic disease in an animal comprising administering a therapeutically effective amount of a compound or salt of claim 1 to the animal.

17. A compound of the formula (III):



(III)

wherein: **X** is $-CHR_5-$, $-CHR_5$-alkyl-, or $-CHR_5$-alkenyl-;

$\mathbf{R_1}$ is selected from the group consisting of:

$-R_4-CR_3-Z-R_6$—alkyl;

$-R_4-CR_3-Z-R_6$—alkenyl;

$-R_4-CR_3-Z-R_6$—aryl;

$-R_4-CR_3-Z-R_6$—heteroaryl;

$-R_4-CR_3-Z-R_6$—heterocyclyl;

$-R_4-CR_3-Z-H$;

$-R_4-NR_7-CR_3-R_6$—alkyl;

$-R_4-NR_7-CR_3-R_6$—alkenyl;

$-R_4-NR_7-CR_3-R_6$-aryl;

$-R_4-NR_7-CR_3-R_6$-heteroaryl;

$-R_4-NR_7-CR_3-R_6$-heterocyclyl; and $-R_4-NR_7-CR_3-R_8$;

each **Z** is independently $-NR_5-$, $-O-$, or $-S-$;

$\mathbf{R_2}$ is selected from the group consisting of:

-hydrogen;

-alkyl;

-alkenyl;

-aryl;

-heteroaryl;

-heterocyclyl;

-alkyl-Y-alkyl;

-alkyl-Y- alkenyl;

-alkyl-Y-aryl; and

- alkyl or alkenyl substituted by one or more substituents selected from the group consisting of:

-OH;

-halogen;

-$N(R_5)_2$;

-CO-$N(R_5)_2$;

-CO-C_{1-10} alkyl;

-CO-O-C_{1-10} alkyl;

-N_3;

-aryl;

-heteroaryl;

-heterocyclyl;

-CO-aryl; and

-CO-heteroaryl;

each $\mathbf{R_3}$ is =O or =S;

each $\mathbf{R_4}$ is independently alkyl or alkenyl, which may be interrupted by one or more –O– groups;

each $\mathbf{R_5}$ is independently H or C_{1-10} alkyl;

$\mathbf{R_6}$ is a bond, or is alkyl, or alkenyl, which may be interrupted by one or more -O- groups;

$\mathbf{R_7}$ is H, C_{1-10} alkyl, or arylalkyl; or R_4 and R_7 can join to form a ring;

$\mathbf{R_8}$ is H or C_{1-10} alkyl; or R_7 and R_8 can join to form a

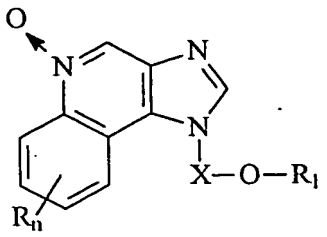
each **Y** is independently –O– or –$S(O)_{0-2}$-;

n is 0 to 4; and

each **R** present is independently selected from the group consisting of C_{1-10} alkyl, C_{1-10} alkoxy, hydroxy, halogen and trifluoromethyl;

or a pharmaceutically acceptable salt thereof.

18. A compound of the formula (IV):



(IV)

wherein **X** is –CHR_5-, -CHR_5-alkyl-, or –CHR_5-alkenyl-;

$\mathbf{R_1}$ is selected from the group consisting of:

-R_4–CR_3–Q–R_6—alkyl;

-R_4–CR_3–Q–R_6—alkenyl;

-R_4–CR_3–Q–R_6—aryl;

-R_4–CR_3–Q–R_6—heteroaryl;

-R_4–CR_3–Q–R_6—heterocyclyl;

-R_4–CR_3–Q–H;

-R_4–NR_5 –CR_3–R_6—alkyl;

-R_4–NR_5 –CR_3–R_6—alkenyl;

-R_4–NR_7 –CR_3–R_6—aryl;

-R_4–NR_7 –CR_3–R_6—heteroaryl;

-R_4–NR_7 –CR_3–R_6-heterocyclyl; and

-R_4–NR_7 –CR_3–R_8;

each **Q** is independently –NR_5– or –O–:

each $\mathbf{R_3}$ is =O or =S;

each $\mathbf{R_4}$ is independently alkyl or alkenyl, which may be interrupted by one or more –O– groups;

each $\mathbf{R_5}$ is independently H or $C_{1\text{-}10}$ alkyl;

$\mathbf{R_6}$ is a bond, alkyl, or alkenyl, which may be interrupted by one or more –O– groups;

$\mathbf{R_7}$ is H, $C_{1\text{-}10}$ alkyl, or arylalkyl; or R_4 and R_7 can join to form a ring;

$\mathbf{R_8}$ is H or $C_{1\text{-}10}$ alkyl; or R_7 and R_8 can join to form a ring;

n is 0 to 4; and

each **R** present is independently selected from the group consisting of C_{1-10} alkyl, C_{1-10} alkoxy, halogen and trifluoromethyl;

or a pharmaceutically acceptable salt thereof.

19. A pharmaceutical composition comprising a therapeutically effective amount of a compound or salt of claim 9 and a pharmaceutically acceptable carrier.

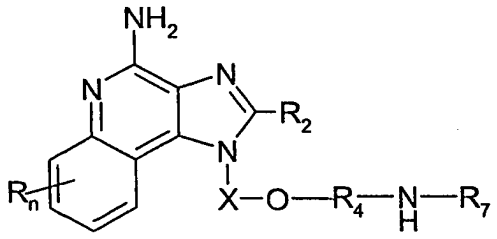
20. A method of inducing cytokine biosynthesis in an animal comprising administering a therapeutically effective amount of a compound or salt of claim 9 to the animal.

21. The method of claim 20 wherein the cytokine is IFN-α.

22. A method of treating a viral disease in an animal comprising administering a therapeutically effective amount of a compound or salt of claim 9 to the animal.

23. A method of treating a neoplastic disease in an animal comprising administering a therapeutically effective amount of a compound or salt of claim 9 to the animal.

24. A compound of the formula (V):



(V)

wherein: **X** is $-CHR_5-$, $-CHR_5$-alkyl-, or $-CHR_5$-alkenyl-;

$\mathbf{R_2}$ is selected from the group consisting of:

-hydrogen;

-alkyl;

-alkenyl;

-aryl;

-heteroaryl;

-heterocyclyl;

-alkyl-Y-alkyl;

-alkyl-Y- alkenyl;

-alkyl-Y-aryl; and

- alkyl or alkenyl substituted by one or more substituents selected from the group consisting of:

-OH;

-halogen;

-$N(R_5)_2$;

-$CO\text{-}N(R_5)_2$;

-$CO\text{-}C_{1\text{-}10}$ alkyl;

-$CO\text{-}O\text{-}C_{1\text{-}10}$ alkyl;

-N_3;

-aryl;

-heteroaryl;

-heterocyclyl;

-CO-aryl; and

-CO-heteroaryl;

each $\mathbf{R_4}$ is independently alkyl or alkenyl, which may be interrupted by one or more –O– groups;

$\mathbf{R_7}$ is H, $C_{1\text{-}10}$ alkyl, or arylalkyl; or R_4 and R_7 can join to form a ring;

each **Y** is independently –O– or $-S(O)_{0\text{-}2}-$;

n is 0 to 4; and

each **R** present is independently selected from the group consisting of $C_{1\text{-}10}$ alkyl, $C_{1\text{-}10}$ alkoxy, hydroxy, halogen and trifluoromethyl;

or a pharmaceutically acceptable salt thereof.